

CLIMATOLOGICAL DATA FOR JANUARY, 1911.

DISTRICT No. 5, UPPER MISSISSIPPI VALLEY.

GEORGE M. CHAPPEL, District Editor.

GENERAL SUMMARY.

There was a great difference in the weather conditions that prevailed over the southern and northern portions of the upper Mississippi Valley during January, 1911. In the southern sections of the district the temperature was above and the precipitation below the normal; and, while there were a few cold days and the average duration of sunshine was below the normal, the month, as a whole, was unusually pleasant for midwinter, and the general conditions were favorable for outdoor occupations, feeding live stock, and for transportation companies. In the northern sections the weather was cold and disagreeable, with the temperature much below and the precipitation considerably above the normal. Only once in the climatological history of North Dakota, and twice in Minnesota, has the average temperature been lower than it was for the past month. The temperature during the first 22 days was below the normal most of the time, and at several stations in North Dakota the minima were zero or below every day of the month. Heavy snow accompanied by high winds prevailed in the northern states from the 3d to the 8th, and as a result of the abnormally severe weather, considerable delay was caused to railroad traffic, many telephone and telegraph lines were rendered unserviceable, and much suffering of live stock was experienced. In the southern half of the district, as in the northern sections, the 2d and 3d were generally the coldest days, but no zero temperatures were recorded in the southern sections after the 5th, and the principal periods of precipitation were on the 13th-14th or 16th-17th. On the 13th-14th a heavy rainstorm occurred over southern Iowa, Missouri, and southern Illinois, and on the 16th-17th moderately heavy snow fell over the middle and southern portions of the district, but as there was very little or no wind, no drifting occurred. The rain on the 13th-14th froze as it fell, covering trees, wires, and walks with a heavy coat of ice which crippled all electric service, and did a vast amount of damage to trees. The last decade of the month was unseasonably warm and generally pleasant.

TEMPERATURE.

The temperature was below the normal in northern and above the normal in the southern sections; the monthly mean for the several states in the district were as follows: North Dakota, -4.6° ; Minnesota, 5.3° ; South Dakota, 5.6° ; Wisconsin, 14.2° ; Iowa, 19.8° ; Missouri, 30.6° ; Indiana, 28.4° ; and Illinois, 29.4° , and the average departure ranged from -8.6° in North Dakota to $+3.1^{\circ}$ in Illinois. The 2d and 3d were the coldest days over the larger part of the district, but over North Dakota and northern Minnesota severe cold weather prevailed during the most of the month; the minima ranged from zero to -48° in those sections.

Over southern Iowa, Missouri, and southern Illinois, the minima were above zero after the 5th or 6th, and in the extreme southern portion of Illinois, the temperature was above zero during the entire month.

The monthly mean temperature for the district as shown by the records of 290 stations, was 15.4° , which is 0.2° below the normal. The highest monthly mean was 41.0° at Cairo, Ill., and the lowest -12.3° at Pembina, N. Dak. The highest temperature recorded was 73° at Mascoutah, Ill., on the 11th, and the lowest was -48° at Little Fork and Pine River Dam, Minn., on the 3d. The greatest daily range was 76° at Westhope, N. Dak.

PRECIPITATION.

The precipitation was above the normal in North Dakota, Minnesota, South Dakota, Missouri, and Indiana, and was below the normal in Wisconsin, Iowa, and Illinois; the average amounts for the various States being as follows: North Dakota, 0.88 inch; Minnesota, 0.80; South Dakota, 1.42; Wisconsin, 0.83; Iowa, 1.12; Missouri, 2.21; Indiana, 2.18; and Illinois, 1.70 inches, and the departures were $+0.42$ inch; $+0.09$; $+0.85$; -0.29 ; -0.51 ; $+0.09$; $+0.20$, and -0.55 inch, respectively. In the northern sections all of the precipitation was in the form of snow and most of it fell during the first decade, but light and scattered snow flurries were frequent during the remainder of the month and the ground was well covered with snow north of central Minnesota at the close, the depth ranging from 12 to 15 inches. In the middle and southern sections of the district most of the precipitation fell during the second and third decades, the principal storm periods being on the 13th-14th, 16th-17th, 20th-21st, 26th-27th, and 29th. The larger part of the precipitation fell during the storms of the 13th-14th and 16th-17th; during the former, heavy rain fell over southeastern Iowa, Missouri, central Illinois, and Indiana, which froze as it fell and covered all objects with a thick coat of ice and caused considerable damage to trees and electric wires. Heavy snow fell over the middle portions of the district on the 16th-17th, but as there was little or no wind, the drifting was slight and railroad traffic was not delayed, and as warm weather followed the snow soon melted. In fact the ground was free from snow in the middle and southern portions of the district most of the time during the month. Numerous thunderstorms occurred over the southern sections on the 1st, 2d, 12th, 13th, and 27th.

The average precipitation for the district, as shown by the records of 299 stations, was 1.14 inch, which is 0.12 inch below the normal. The greatest amount, 4.17 inches, occurred at La Harpe, Ill., and the least, 0.14 inch, at Little Fork, Minn. The greatest amount in 24 hours, 2.51 inches, occurred at Gorin, Mo., on the 13th. The average depth of unmelted snowfall was 7.7 inches; the greatest depth was 25 inches at New Ulm, Minn. There was no snowfall recorded at Cobden, Ill. Measurable precipitation occurred on an average of 6 days.

SUNSHINE AND CLOUDINESS.

The average number of clear days was 9; partly cloudy 8; cloudy 14. The duration of sunshine was below the normal.

WIND.

Northwest winds prevailed except in Missouri, Indiana, and Illinois, where the prevailing winds were from the southwest. The highest velocity reported was 60 miles per hour from the northwest at Bismarck, N. Dak., on the 3d.

MISCELLANEOUS.

The warm weather during the latter part of the month over the southern sections of the district developed the fruit buds to such an extent that they are liable to be damaged by cold weather that may occur during the remainder of the season, and the absence of snow covering, and the covering of the wheat fields with ice on the 13th and 14th, is said to have resulted in damage to the wheat crop.

Mr. William E. Barron, local forecaster, United States Weather Bureau, Cairo, Ill., writes:

On account of the warm conditions, snowball bushes, rose bushes, and some other shrubs were observed to be budding and leafing on the 29th. The flower buds of the soft maple appeared on the 31st. Fruit remained safe. There was a decided deficiency of sunlight, which doubtless worked to their advantage.

The absence of snow during the larger part of the month over the southern sections, did, however, allow stock to range on pasture throughout the month. A good crop of ice of excellent quality was harvested from the lakes and larger streams, and a large amount was shipped to towns not favorably situated for gathering it.

A thunderstorm occurred in several counties in southern Iowa on the 13th. The barn of John Katzenbarger at Hopeville, Clarke County, Iowa, was struck by lightning, killing 15 hogs and 2 cows and doing considerable minor damage but fortunately the barn was not burned.

The following item was published in the Audubon Republican, relative to the rain and sleet storm in southern Iowa on the 13th-14th:

BURLINGTON, IOWA, January 16.—For almost 24 hours Burlington was cut off from the world by the worst sleet storm since 1892. Miles of telegraph wires were down, telephones were out of commission, the electric-light service was stalled and almost every means of communication with outside towns destroyed. Fruit trees all over southern Iowa have been split and ruined by the heavy ice and thousands of dollars worth of damage has been done to telephone and telegraph wires. Electric lighting currents were turned off to prevent fatalities and fires from broken wires throughout the city.

RIVERS.

The rivers and lakes remained frozen during the month, except in the extreme southern portion of the district. The official in charge of the local office of the Weather Bureau at Hannibal, Mo., reports that the river continued frozen over at that place, above the Wabash bridge, from the 1st to the morning of the 27th, when the ice broke up and moved out, and there was floating ice most of the time until the end of the month. At Dubuque, Iowa, the ice in the Mississippi River varied from about 10 inches in thickness at the beginning of the month to

about 16 inches toward the close. The ice harvest was practically finished by the 16th and the quality of ice was exceptionally fine. The ice in Wisconsin ranged from 15 to 20 inches, and it was from 11 to 13 inches in thickness at Keokuk, Iowa, from which place a large amount was shipped to St. Louis, Mo., and other points.

DRAINAGE AND ENGINEERING NOTES.

The following is a report of the work done during the month by the United States Army Engineers, under the supervision of Mr. A. O. Rowse, assistant engineer: Hydrographs were made showing the stage of water referred to the readings of July 25, 1910, as datum plane, for the 13 gages read during the season of 1910, and also for all readings that have been taken at Des Moines by the United States Weather Bureau since 1893, and for readings taken at Keosauqua by the United States Geological Survey during 1903, 1904, 1905, and 1906. The index map on a scale of 1 inch to 2 miles was completed. About 35 per cent of the work of drawing contours was done, making this work 45 per cent complete. Thirty miles of profile showing water surface at low water, river bottom, and both banks were platted, completing this work. The work of placing section and property lines on the map was completed. The indexing of notebooks was about 75 per cent completed. Estimates were made for typical locks of 12 feet lift, 60 feet in width, 350 feet between quoins, and with sills for 6 and 9 feet depth of waterway, respectively.

Probings were made at proposed dam sites and results were platted.

Lakes Heron and Shatek, located in southern Minnesota and tributary to the Des Moines River, were examined to ascertain the possibility of their use as storage reservoirs.

The Register and Leader, Des Moines, Iowa, published the following on January 15:

BRITT, IOWA, January 14.—Special: The largest and most expensive drainage district ever opened in Iowa has been begun here and when finished will drain nearly half of the farm land of Hancock County. The ditch will extend more than 50 miles and will cost about \$300,000. The ditch will be an open one, and will start at the boundary line between Franklin and Hancock Counties and extend northwest. The main ditch will be 60 feet wide at the top and 12 feet in depth. Near Britt it will branch, one branch extending northwest to near the town of Hayfield, and the other branch extending north of this place. The branches will be slightly narrower than the main channel, and it is estimated that it will require three years to build. Close figuring has put the cost at \$260,000, but it is believed that it will exceed that amount.

The generally warm conditions and the low stage of the Mississippi River have been favorable for construction work on the Mississippi Water Power Dam at Keokuk, Iowa, and the work has progressed rapidly from both the Iowa and Illinois shores.

The following item taken from the Marshalltown, Iowa, Times-Republican of January 11 will give some idea as to the amount of tiling being done on the farms in Iowa.

SWEA CITY, IOWA, January 11.—With Mason City putting out a train load of tile per day it has often been said that the time would come when the whole country would be tiled. But it is quite evident that that time has not arrived, and the farmers in this locality have learned that tile in dry seasons is as profitable as tile in wet seasons. During the past year there has been shipped into Swea City, a town of about 400 inhabitants, 530 carloads of tile, and every bit of it has been put into service.

TABLE 1.—Climatological data for January, 1911. District No. 5, upper Mississippi Valley.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.							Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, .10 inch or more.	Number of partly cloudy days.	Number of cloudy days.		
<i>North Dakota.</i>																			
Amenia.	Cass.	945	13	-3.2	-9.6	32	10	-30	3	49	0.18	-0.32	0.10	1.8	2	14	6	11	nw. C. E. Wood.
Bottineau.	Bottineau.	1,638	15	-8.2	-8.4	24	4†	-38	16	60	1.03	+ 0.54	0.41	9.0	11	7	4	20	nw. J. A. Kemp.
Cando.	Towner.	1,488	9	-7.6	-6.6	23	6	-35	15	53	0.25	-0.21	0.08	5.5	5	19	5	7	s. E. T. Judd.
Crosby.	Divide.	4	3.8	-5.8	-5.8	31	3	-36	2	59	1.09	-0.28	0.28	5.5	6	12	7	12	nw. H. C. Kaschau.
Devils Lake.	Ramsey.	1,482	5	-5.5	-5.8	28	28	-31	11	51	0.83	+ 0.23	0.22	9.5	9	9	5	17	nw. U. S. Weather Bureau.
Donnybrook.	Ward.	1,760	11	-4.6	-6.5	32	28	-34	11	57	0.40	-0.04	0.10	4.0	9	4	18	nw. C. J. De Vore.	
Dunseith.	Rolette.	13	-8.1	-14.0	20	4†	-40	15	42	0.95	+ 0.45	0.20	9.5	8	15	6	10	nw. L. H. Trowbridge.	
Edmore.	Ramsey.	1,524	5	-9.2	-22	6†	67	-32	2†	40	0.45	-0.15	0.20	4.5	3	12	4	15	nw. H. R. Aslakson.
Forman.	Sargent.	1,249	16	-4.8	-7.3	26	23	-32	11	40	2.12	+ 1.52	1.50	21.4	9	12	4	15	ne. A. Maltby.
Grafton.	Walsh.	827	13	-5.9	-7.3	26	23	-32	3	66	1.10	-0.40	0.40	11.0	8	3	20	8	nw. W. A. Christiansen.
Granville.	McHenry.	1,504	4	-4.8	-30	3†	-36	3	66	1.10	-0.20	0.20	7.0	5	13	4	14	nw. J. Moffatt.	
Hannah.	Cavalier.	1,563	5	-7.5	-20	28	28	-37	11	45	0.33	-0.10	0.29	6	15	5	11	nw. Geo. Dale.	
Hansboro.	Towner.	3	-8.1	-27	28	-34	11	-34	11	45	0.33	-0.10	0.30	6.1	5	6	17	nw. F. E. Mayall.	
Hillsboro.	Traill.	901	5	-1.4	-29	9	28	3	50	0.61	-0.10	0.30	6.1	5	6	17	nw. C. R. Pettes.		
Lakota.	Nelson.	1,519	4	-7.0	-24	28	-35	3	44	0.49	-0.10	12.5	10	6	22	3	nw. J. Woolner.		
Langdon.	Cavalier.	1,615	15	-4.8	-24	22	-20	28	44	3.65	+ 3.37	0.65	9	12	2	17	n. R. Gray.		
Larimore.	Grand Forks.	1,134	15	-4.8	-9.9	24†	22	-20	28	44	3.65	+ 3.37	0.65	9	12	2	17	n. H. K. Adams.	
Lisbon.	Ransom.	1,001	6	3.4	-40	10	-28	3	62	1.30	-0.60	13.0	6	9	7	15	nw. N. P. Swenson.		
McKinney.	Renville.	1,640	16	-5.8	-9.3	34	28	-42	15	50	0.60	+ 0.27	0.20	6.0	5	12	7	10	nw. P. B. Anderson.
Manfred.	Wells.	1,605	9	-1.6	-42	2	-30	2	71	1.10	-0.20	11.0	9	9	12	10	nw. W. C. Gould.		
Mayville.	Troutl.	975	5	-2.8	-11.0	26	28	-31	10	30	1.20	+ 0.91	0.60	5	5	5	5	n. J. Bates.	
Minot.	Ward.	1,557	12	-2.4	-8.7	35	4	-33	11	63	0.53	+ 0.13	0.15	5.3	8	17	1	13	n. S. S. Marsh.
Minto.	Walsh.	820	17	-5.8	-7.7	31†	5	-31	11	50	1.00	+ 0.48	0.35	7	13	3	15	n. W. E. Williams.	
Oriska.	Barnes.	1,270	5	0.2	-32	9	-25	25	45	0.85	-0.10	0.40	8.5	5	6	16	9	n. A. Heyward.	
Park River.	Walsh.	998	7	-4.6	-26	28	-31	11	42	0.26	-0.27	0.22	2.0	2	12	13	6	n. C. W. Shumaker.	
Pembina.	Pembina.	789	12	-12.3	-12.7	24	23†	-38	14	40	0.20	-0.59	0.05	2.0	4	13	9	nw. J. A. Power.	
Power.	Power.	1,020	18	-2.0	-7.2	36	28	-33	3	57	0.85	+ 0.31	0.40	8.5	4	10	12	n. C. H. Butts.	
Pratt.	McHenry.	6	-4.0	-28	3†	-36	11	60	1.10	-0.20	11.0	7	14	7	10	nw. B. Bagley.			
Towner.	do.	2	-4.0	-28	3†	-36	11	60	1.10	-0.20	11.0	7	14	7	10	n. H. E. Simpson.			
University.	Grand Forks.	830	19	-5.2	-9.7	24	9†	-34	15	43	0.89	+ 0.35	0.30	9.1	6	13	7	11	n. E. G. Burch.
Wahpeton.	Richland.	962	19	2.2	-6.3	34	9†	-31	3	48	0.70	+ 0.30	0.40	7.0	5	10	9	12	n. C. H. Lee.
Walhalla.	Pembina.	968	6	-4	-2.8†	38	11	-38	11	76†	0.60	-0.30	6.0	3	11	5	15	n. C. W. Clark.	
Westhope.	Bottineau.	1,471	17	-4.8†	-5.9	29	4	-28†	15†	42†	0.45	+ 0.06	0.20	4.5	5	10	9	12	n. M. A. Ostby.
<i>Minnesota.</i>																			
Albert Lea.	Freeborn.	1,220	20	10.3	-2.6	40	29	-29	3	40	1.15	+ 0.24	0.50	15.0	5	7	12	12	nw. E. Carey.
Alexandria.	Douglas.	1,391	17	6.6	-1.1	43	31	-29	3†	41	0.60	-0.06	0.20	7.2	6	12	4	15	nw. P. O. Unumb.
Angus.	Polk.	870	9	-5.7	-27	9	-34	3	44	0.55	-0.15	5.5	5	7	8	16	n. John Nadvornik.		
Bagley.	Clearwater.	5	-1.2	-35	25†	-40	3	53	0.65	-0.28	10.0	5	10	14	7	se. Jens Nelson.			
Beardsley.	Bigstone.	1,090	17	-10.1	-7.4	42	31	-35	3	42	0.64	+ 0.07	0.18	20.2	10	11	11	9	n. R. A. Smith.
Beaulieu.	Mahnomen.	1,200	9	-10.0	-3.5	42	31	-32	3	44	0.54	-0.08	0.17	7.4	9	11	5	15	n. Dr. P. A. Slattery.
Bird Island.	Reenville.	1,039	21	7.0	-3.5	42	31	-32	3	44	0.54	-0.08	0.17	7.4	9	11	5	15	n. Dr. F. L. Puffer.
Caledonia.	Houston.	1,179	18	14.4	-1.1	41	9	-21	3†	48	1.12	+ 0.11	0.60	11.2	6	9	1	21	n. W. D. Belden.
Campbell.	Wilkin.	984	2	-2.8†	-2.8	38	11	-38	11	76†	0.60	-0.30	6.0	3	11	5	15	n. J. T. Neiss.	
Cass.	Cass.	1,300	4	-4.0	-3.6	39	31	-31	3	35	0.49	-0.17	0.35	9.0	4	8	9	9	n. C. W. Burns.
Collegeville.	Stearns.	1,252	18	10.0	-3.6	39	31	-31	3	35	0.49	-0.17	0.18	8.0	7	14	8	9	n. F. Tembreul.
Crookston.	Polk.	863	21	-4.2	-7.6	29	9	-29	3	42	0.70	+ 0.11	0.30	7.0	5	13	8	10	n. A. G. Anderson.
Detroit.	Becker.	1,364	15	-3.0	-9.4	35	25†	-34	3	49	0.35	-0.27	0.10	3.3	5	12	6	13	n. G. W. Peoples.
Fairmont (near).	Martin.	1,240	24	10.1	-2.7	44	31	-25	3	50	1.80	+ 0.91	1.00	21.0	4	10	17	4	s. W. F. Wherland.
Faribault.	Rice.	1,003	14	10.0	-4.6	41	31	-31	3	42	0.64	+ 0.07	0.18	20.2	10	11	11	9	s. Dr. A. C. Tanner.
Farmington.	Dakota.	902	23	10.4	-2.4	40	10†	-33	3	40	1.10	+ 0.17	0.50	15.0	5	9	8	14	s. E. D. Akin.
Fergus Falls.	Ottertail.	1,210	19	2.7	-6.3	35	25	-28	3	45	0.66	+ 0.01	0.20	6.6	3	9	10	10	s. C. E. Kissinger.
Fort Ripley.	Crow Wing.	1,136	4	4.4	-38	27	-32	3	48	0.30	-0.27	0.20	5.4	3	19	1	11	n. J. J. Tucker.	
Fosston.	Polk.	1,289	2	-2.8	-35	25†	-32	3	48	0.31	-0.14	0.14	3.1	3	11	8	12	n. O. N. Hem.	
Fram.	Marshall.	6	-6.6	-42	26	-35	11	57	0.72	-0.27	9.0	5	1	27	3	nw. A. W. Clark.			
Glencoe.	McLeod.	1,000	15	9.6	-4.5	40	31	-33	3	39	1.15	+ 0.51	0.45	11.5	5	9	14	8	n. C. G. Selvig.
Grand Meadow.	Mower.	1,338	23	11.8	-0.5	43	31	-30	3	35	1.09	+ 0.14	0.32	12.5	6	12	7	12	n. C. F. Greening.
Halfock.	Kittson.	815	12	-7.9	-9.5	19	28	-39	3	43	0.74	+ 0.19	0.20	7.5	9	20	2	9	n. D. A. Robertson.
Halstad.	Norman.	870	5	-1.7	-30	9†	-28	3	45	0.43	-0.16	4.2	4	13	6	12	n. A. G. Holstrom.		
Hinckley.	Pine.	1,050	6	8.0	-36	10†	-32	3	48	0.40	-0.10	4.0	4	8	23	8	n. W. R. Newman.		
International Falls.	Koochiching.	1,112	3	-2.1	-36	26	-35	3†	50	1.75	-0.40	0.40	17.5	10	17	9	5	n. Rees Roe.	
Kellher.	Beltrami.	4	-4.0	-27	32	-35	3†	-27	3	52	0.85	+ 0.37	0.35	8.5	5	19	5	10	n. A. Gilmour.
Lake Crystal.	Blue Earth.	4	-4.0	-5.6	42	26	-41	3	46	0.58	-0.18	0.35	8.5	5	19	5	10	n. W. P. Cobb.	
Leech Lake Dam.	Cass.	1,301	23	-0.9	-5.6	42	26	-41	3	46	0.58	-0.18	0.34	8.6	6	3	15	13	w. Hans Olson.
Litchfield.	Meeker.	1,134	2	-2.5	-42	26	-48	3	57	0.14	-0.14	1.5	1	15	8	8	n. N. Y. Taylor.		
Little Fork.	Koochiching.	1,209	19	4.4	-4.0	40	31	-36	3	46	1.00	+ 0.39	0.55	4.0	3	12	6	12	n. O. C. Olson.
Long Prairie.	Todd.	1,175	10	12.2	-3.9	47	31	-38	3	46	1.00	+ 0.39	0.55	3.5	3	17	9	9	n. R. M. Sheets.
Lynd.	Lyon.	747	12	-3.0	-2.9	40	10	-24	3	45	0.99	-0.03	0.50	19.0	5	9	7	15	n. sw. J. W. Rouse.
Mankato.	Blue Earth.	1,023	18	8.9</td															

TABLE 1.—Climatological data for January, 1911. District No. 5—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmetted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of overcast days.		
<i>Minnesota—Continued.</i>																				
Taylors Falls.	Chicago.	759	4	10.7	.....	40	10†	-36	3	50	1.02	.....	0.30	10.2	8	14	2	16	n.	Minneapolis Gen. Elec. Co.
Warroad.	Roseau.	1,069	2	-5.2	.....	30	25†	-41	3	56	1.02	.....	0.30	10.2	8	14	3	14	nw.	J. H. Sawyer
West Concord.	Dodge.	1,232	2	13.6	.....	40	31	-31	3	37	1.02	.....	0.25	10.0	5	6	20	5	nw.	H. H. Orcutt.
Windom.	Cottonwood.	1,336	4	12.2	.....	52	31	-30	3	40	0.72	.....	0.25	10.0	4	15	8	11	nw.	T. C. Richmond.
Winnebago.	Faribault.	1,100	12	-4.8	44	31	-29	3	41	1.25	+ 0.45	0.60	13.0	4	15	8	11	nw.	H. H. Haight.	
Winnibigoshish.	Itasca.	1,300	23	1.6	-4.1	40	26	-30	3	50	0.68	- 0.07	0.33	8.3	6	12	11	8	nw.	J. Duncan.
Winona.	Winona.	700	15	15.7	+ 3.3	42	10	-25	3	39	0.93	- 0.23	0.31	10.2	7	15	3	13	nw.	P. C. Myers.
Worthington.	Nobles.	1,593	16	10.6	-4.3	48	31	-26	3	44	1.00	+ 0.40	0.42	10.0	3	12	5	14	s.	M. P. Mann.
Zumbrota.	Goodhue.	917	15	13.1	-2.2	43	31	-31	3	40	0.67	.....	0.32	7.5	3	11	9	11	nw.	W. C. Rowell.
<i>South Dakota.</i>																				
Milbank.	Grant.	1,148	20	5.6	-7.0	39	9	-26	3	47	1.42	+ 0.85	0.70	10.2	4	14	0	17	nw.	I. T. Patridge.
<i>Wisconsin.</i>																				
Antigo.	Langlade.	1,489	17	13.6	+ 0.1	38	24	-22	5	40	0.75	.....	0.40	10.2	4	13	0	18	w.	Elton C. Larzelere.
Barron.	Barron.	1,115	20	8.6	-1.7	37	10	-35	3	43	0.86	- 0.26	0.43	8.5	7	11	12	8	nw.	Wm. A. Kent.
Beloit.	Rock.	750	45	22.2	+ 1.8	44	26	-7	4	37	0.69	- 1.19	0.34	6.6	3	16	0	17	w.	Smith Observatory.
Big St. Germain Dam \$.	Vilas.	1,590	1	11.3	.....	40	24	-31	6	41	0.86	.....	0.38	11.5	5	13	1	17	nw.	Oscar Brehmer.
Brodhead.	Green.	812	13	21.2	+ 0.4	48	31	-10	4	50	0.80	- 0.54	0.40	6.5	4	11	6	14	nw.	Hector D. Kirkpatrick.
Burnett.	Dodge.	880	7	17.3	.....	40	31	-21	4	36	0.73	.....	0.45	10.8	8	8	7	16	nw.	Geo. W. Smith.
Cottage Grove.	Dane.	888	.....	.....	.....	43	10†	-13	4	43	0.55	.....	0.27	6.8	5	7	12	12	sw.	John E. Mellish.
Darlington.	Lafayette.	867	5	18.2	.....	43	10†	-13	4	43	0.48	.....	0.27	5.6	3	13	3	15	nw.	S. P. Nelson.
Deerskin Dam \$.	Forest.	1,625	1	.....	37	10†	.....	.....	.....	.....	0.48	.....	0.27	5.6	3	13	3	15	w.	Wm. E. O'Neal.
Delavan.	Walworth.	920	20	21.4	+ 2.2	46	31†	-8	4†	39	0.45	- 1.15	0.17	4.0	8	5	9	17	sw.	Elwood S. Austin.
Dodgeville.	Iowa.	1,116	11	15.4	-2.6	41	31	-14	4†	41	0.68	- 0.17	0.54	6.7	3	10	0	21	sw.	Geo. H. Butler.
Downing.	Dunn.	983	9	10.2	.....	40	31†	-30	4	32	0.55	.....	0.32	7.0	3	5	5	11	w.	Eugene F. Stoddard.
Eau Claire.	Eau Claire.	800	20	13.3	+ 0.2	41	10†	-28	3	40	1.11	+ 0.11	0.48	10.7	6	5	5	11	nw.	Robert D. Whitford.
Grand Rapids.	Wood.	1,021	12	14.2	-0.9	40	31†	-27	4	37	2.14	+ 1.06	0.90	21.5	5	8	8	15	sw.	Willis B. Raymond.
Grantsburg.	Burnett.	1,095	20	8.8	-2.1	39	23	-24	3	42	0.48	- 0.63	0.22	5.5	4	13	8	10	nw.	Theodore Olsen.
Hancock.	Wausau.	1,091	19	16.2	+ 0.9	41	24	-27	4	37	0.65	- 0.59	0.35	8.0	2	6	5	20	sw.	Frederick B. Hamilton.
Hattfield.	Jackson.	973	11	11.6	-3.3	42	31†	-43	4	51	1.64	+ 0.81	0.70	13.0	4	12	6	13	s.	Walter S. Woods.
Hayward.	Sawyer.	1,197	20	7.6	-2.4	38	32†	-40	3	50	0.96	- 0.08	0.40	12.0	5	5	10	16	s.	William E. Swain.
Hillsboro.	Vernon.	1,000	20	14.4	-0.9	42	31†	-37	4	47	0.93	- 0.48	0.45	11.0	4	12	11	19	s.	Emil V. Wernick.
Koepenick.	Langlade.	1,683	20	11.4	-1.3	40	24	-32	5	43	0.96	- 0.39	0.35	12.0	5	0	12	19	s.	Edward S. Koepenick.
Lac du Flambeau\$.	Vilas.	1	13.0	.....	44	24	-24	6	40	0.57	.....	0.29	7.0	4	15	3	13	s.	W. J. Lovett.	
La Crosse.	La Crosse.	714	39	15.2	-0.1	43	24	-20	3	39	0.79	- 0.29	0.26	10.3	10	4	7	20	s.	U. S. Weather Bu., S. Newton.
Lake Mills.	Jefferson.	897	20	19.4	+ 1.0	43	31	-11	3	40	0.93	- 0.62	0.30	6.8	12	5	10	16	sw.	Dexter Smith.
Lancaster.	Grant.	1,070	20	18.6	+ 2.1	43	31	-15	3	43	0.98	- 0.06	0.25	9.5	6	11	8	13	s.	Edward Pollock.
Long Lake.	Oneida.	1,592	3	9.4	.....	38	24	-41	4	51	0.81	.....	0.39	12.5	6	11	4	16	s.	Louie Frank.
Madison.	Dane.	974	42	19.3	+ 2.8	41	29	-11	4	37	0.60	- 0.96	0.24	6.4	7	4	5	22	nw.	U. S. Weather Bureau.
Mather.	Juneau.	962	7	.....	.....	41	24	-33	3	39	0.57	.....	0.29	7.0	4	15	3	13	s.	Frank Evans.
Mauston.	Lincoln.	882	15	16.6	+ 0.8	43	24	-29	4	41	1.70	+ 0.64	1.00	13.0	3	9	7	15	nw.	Eugene L. Hitchcock.
Meadow Valley.	Lincoln.	974	20	14.4	+ 0.7	41	24	-36	4	47	0.51	- 0.29	0.18	11.0	3	6	12	13	nw.	Charles H. Johnson.
Medford.	Taylor.	1,420	22	13.8	+ 0.9	40	24	-26	5	42	0.95	- 0.01	0.50	12.0	2	2	20	9	s.	William Zeit.
Merrill.	Milwaukee.	1,267	5	.....	.....	41	24	-34	6	49	0.74	.....	0.30	9.5	8	6	9	16	s.	Wm. T. Hunter.
Minoequa.	Oneida.	1,604	7	9.2	.....	43	24	-34	6	49	0.74	.....	0.30	9.5	8	6	9	16	s.	Benjamin W. Applebee.
Mondovi.	Buffalo.	738	3	13.4	.....	41	10	-34	3	50	0.72	.....	0.40	8.0	4	12	7	19	nw.	Dr. Charles Hebard.
Mount Horeb.	Dane.	1,226	7	19.2	.....	46	30	-15	4	40	0.74	.....	0.20	5.5	6	5	5	19	w.	W. M. Lewis.
Museoda.	Grant.	666	2	14.8	.....	43	29	-21	5	52	1.38	.....	0.68	4.9	6	8	10	13	nw.	Henry Eckstein.
Neillsville.	Clark.	996	21	11.4	-1.7	40	24†	-36	3	46	1.10	- 0.01	0.80	10.0	4	11	0	20	nw.	William Heaslett.
New Richmond.	St. Croix.	990	6	9.1	.....	41	31	-33	3	39	0.90	.....	0.65	11.0	2	2	5	15	nw.	Franz A. R. Van Meter.
Osceola.	Polk.	806	20	11.2	+ 1.2	39	30	-35	3	49	0.68	- 0.32	0.60	7.5	2	11	1	19	s.	Charles W. Staples.
Park Falls.	Price.	1,492	20	10.8	.....	41	24	-28	5	43	0.52	.....	0.30	2.5	4	20	0	11	w.	Flambeau Paper Co.
Portage.	Columbia.	809	22	17.8	-0.4	44	31	-25	4	47	0.43	- 0.72	0.20	4.0	3	12	6	13	nw.	Jeremiah Hanifan.
Port Edwards.	Wood.	969	1	14.2	.....	41	10	-27	5	44	1.64	.....	1.25	18.5	3	8	2	21	w.	Nekoosa-Edwards Paper Co.
Prairie du Chien.	Crawford.	690	20	16.0	-2.3	45	31†	-17	4†	49	0.65	- 0.57	0.32	9.0	3	5	14	12	s.	Jas. A. Gillis.
Prentice.	Price.	1,551	13	.....	.....	41	24	-29	6	43	0.66	.....	0.36	10.0	6	7	7	17	sw.	Joseph G. Lash.
Rhinelander.	Oneida.	1,550	5	12.4	.....	41	24	-29	6	43	0.66	.....	0.36	10.0	6	7	7	17	sw.	John Lind.
Sauk City.	Sauk.	758	3	18.0	.....	45	27	-24	4	45	0.55	.....	0.23	9.0	4	8	6	17	sw.	Killian Derleth.
Sculdsburg.	Lafayette.	1,019	5	19.6	.....	45	26	-13	4†	39	0.55	.....	0.35	5.0	2	15	5	11	sw.	Harrison B. Chamberlin.
Solon Springs.	Douglas.	1,083	5	5.5	.....	37	10†	-39	3	53	0.43	.....	0.35	5.0	4	14	13	4	w.	John M. Sayles.
Spooner.	Washburn.	1,104	17	8.1	-3.1	38	26	-32	3	39	0.43	- 0.51	0.18	5.0	4	14	13	4	nw.	Horace A. Bresee.
Stanley.	Chippewa.	1,082	7	11.6	.....	40	26†	-30	3	38	0.91	.....	0.40	9.0	4	10	4	17	nw.	W. Humphrey Scott.
Stevens Point.	Portage.	1,113	18	14.0	-0.8	41	24	-28	4	38	1.34	+ 0.30	0.55	15.0	5	9	5	19	nw.	Garry E. Culver.
Sugar Camp Dam \$.	Oneida.	1,582	1	.....	.....	41	24	-35	4	44	0.53	.....	0.32	9.5	4	9	9	13	s.	Robert Hayes.
Twin Lakes Dam \$.	Villas.	1,625	1	15.0	-0.1	40	24	-28	4											

TABLE 1.—Climatological data for January, 1911. District No. 5—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.								Precipitation, in inches.								Sky.	Observers.							
				Mean.				Departure from the normal.				Highest.				Lowest.				Greatest daily range.				Total.				Prevailing wind direction.
				Date.		Date.		Date.		Date.		Date.		Date.		Date.		Date.		Date.		Date.		Date.		Date.		
<i>Iowa—Continued.</i>																												
Dubuque.	Dubuque.	639	37	21.2	+ 2.9	48	10	-11	3	43	0.72	- 0.77	0.23	6.6	6	3	11	17	s.	U. S. Weather Bureau.								
Earlham.	Madison.	8	22.6	22.6	+ 3.5	49	29†	-19	3	52	1.05	- 0.16	0.50	10.5	5	7	11	13	sw.	George Phillips.								
Elkader.	Clayton.	727	31	18.3	+ 3.5	49	29†	-22	4	52	1.15	- 0.16	0.40	8.5	6	13	9	9	n.	Chas. Reinecke.								
Elma.	Howard.	1	13.2	13.2	+ 2.0	40	26†	-28	3	38	0.76	- 0.11	0.30	8.5	6	11	9	11	nw.	H. A. Moore.								
Estherville.	Emmet.	1,298	15	11.4	- 3.6	49	31	-28	3	45	0.75	+ 0.19	0.40	8.0	2	20	11	11	s.	A. O. Peterson.								
Fairfield.	Jefferson.	26	24.6	+ 7.0	59	10	-12	3	50	0.75	- 0.11	0.23	6.6	6	10	8	13	sw.	R. Monroe McKenzie.									
Fayette \$.	Fayette.	1,003	15	15.2	- 0.9	44	29†	-24	3	44	0.88	- 0.40	0.34	12.2	5	6	9	16	nw.	R. Z. Latimer.								
Forest City \$.	Winnebago.	1,226	16	12.6	- 3.6	42	22†	-28	3	52	0.90	+ 0.26	0.40	12.0	3	15	7	9	se.	J. A. Peters.								
Fort Dodge.	Webster.	1,126	10	16.6	- 0.5	53	31	-24	3	46	0.75	+ 0.11	0.40	7.5	3	9	17	n.	J. F. Monk.									
Fort Madison.	Lee.	516	61	11	- 0.5	53	31	-24	3	46	2.11	+ 0.15	1.50	5	1	11	19	n.	Miss L. A. McCready.									
Gilman.	Marshall.	1,052	11	11	- 0.5	53	31	-24	3	46	0.80	- 0.03	0.60	8.0	3	11	19	n.	J. L. Wylie.									
Grand Meadow.	Clayton.	1,180	19	16.0	+ 0.5	45	29	-25	3	40	0.80	- 0.37	0.35	8.0	5	6	11	14	sw.	F. L. Williams.								
Greene.	Butler.	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	J. L. Cole.				
Grinnell.	Poweshiek.	1,023	19	22.4	+ 2.2	55	10	-18	3	48	1.13	- 0.14	0.40	8.2	6	7	10	14	sw.	D. W. Brainard.								
Grundy Center \$.	Grundy.	976	19	19.8	+ 2.9	48	29	-23	3	47	0.50	- 0.32	0.20	5.0	3	14	8	9	nw.	J. B. Calderwood.								
Guthrie Center \$.	Guthrie.	1,077	15	22.4	- 0.3	53	10	-21	3	53	0.88	+ 0.29	0.41	9.0	5	2	19	10	nw.	D. G. Beardsley.								
Hampton.	Franklin.	1,155	26	15.7	+ 0.2	50	31	-25	3	33	1.01	- 0.03	0.50	9.8	5	16	11	4	nw.	E. C. Grenello.								
Humboldt.	Humboldt.	1,095	17	17.2	+ 0.4	50	31	-28	3	51	0.80	+ 0.25	0.25	8.0	5	9	9	13	nw.	Henry S. Wells.								
Independence \$.	Buchanan.	921	46	18.0	+ 2.8	45	29†	-22	3	45	0.85	- 0.38	0.30	8.5	5	9	9	13	nw.	R. E. Dudley.								
Indianola.	Warren.	969	19	23.2	+ 3.0	56	10	-16	3	48	0.89	- 0.38	0.32	4.1	5	3	7	21	nw.	John L. Tilton.								
Iowa City.	Johnson.	683	50	20.0	+ 0.9	56	10	-16	3	51	0.87	- 0.87	0.34	5.0	6	7	1	23	nw.	Prof. A. G. Smith.								
Jowa Falls.	Hardin.	1,170	17	13.5	- 1.7	47	29	-26	3	45	1.31	+ 0.41	0.50	13.1	5	13	2	16	nw.	J. B. Parmelee.								
Jefferson \$.	Greene.	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M. E. Hall.					
Kekokuk.	Lee.	547	39	29.6	+ 5.9	63	10	-10	3	41	2.06	+ 0.97	1.93	3.5	8	6	9	16	sw.	U. S. Weather Bureau.								
Keesauqua.	Van Buren.	644	18	24.8	+ 1.7	61	10	-11	3	52	2.25	+ 0.88	1.50	7.0	5	2	10	19	nw.	J. H. Landes.								
Knoxville \$.	Marion.	920	15	24.6	+ 1.5	55	10	-15	3	48	1.01	- 0.34	0.40	5.3	6	5	12	14	nw.	Casey and Belville.								
Lacona.	Warren.	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	J. B. Alter.					
Le Claire.	Scott.	576	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Miss M. T. Disney.				
Marshalltown.	Marshall.	947	18	17.4	- 2.0	51	10†	-22	3	45	1.02	+ 0.02	0.51	-	5	6	6	19	nw.	Ralph B. Reasoner.								
Mason City \$.	Cerro Gordo.	1,132	13	13.8	- 1.3	43	29	-26	3	39	0.91	- 0.24	0.40	9.1	4	10	12	9	nw.	J. S. Mills.								
Mount Pleasant \$.	Henry.	729	29	26.3	+ 5.3	58	10	-12	3	42	2.00	+ 1.14	1.33	10.2	6	6	10	15	sw.	J. W. Edwards.								
Muscatine.	Muscataine.	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	William Molis.				
New Hampton \$.	Chickasaw.	1,169	13	14.1	- 2.7	42	29†	-27	3	36	0.85	+ 0.02	0.30	8.5	5	15	5	11	nw.	A. F. Kemman.								
Newton \$.	Jasper.	944	22	23.8	+ 6.3	52	10†	-5	3	49	1.20	+ 0.23	0.90	12.5	3	14	4	13	nw.	J. P. Beatty.								
Northwood \$.	Worth.	1,222	14	12.2	- 4.1	43	26	-27	3	39	2.07	+ 1.17	0.60	19.0	10	14	4	13	nw.	Chas. H. Dwelle.								
Olin \$.	Jones.	760	12	22.2	+ 1.6	53	31	-14	3	47	0.54	- 1.14	0.40	4.0	3	14	4	13	nw.	M. H. Crissman.								
Osage.	Mitchell.	1,184	23	14.4	+ 0.4	44	31	-26	3	41	1.52	+ 0.60	0.67	20.0	5	14	4	13	nw.	A. D. Bundy.								
Oskaloosa \$.	Mahaska.	843	34	23.5	+ 4.3	54	29	-15	3	42	0.83	- 0.09	0.37	3.8	5	9	1	21	nw.	Joseph Boyd.								
Ottumwa.	Wapello.	649	15	25.7	+ 1.2	58	10	-13	3	44	1.19	- 0.41	0.68	6.5	3	12	11	8	w.	Chester Potter.								
Pella.	Marion.	877	8	24.4	-	58	10	-14	3	48	1.21	-	0.59	7.0	5	15	0	16	nw.	John H. Ver Steeg.								
Perry \$.	Dallas.	975	9	22.8	+ 2.1	52	29	-20	3	54	0.60	- 0.22	0.45	6.0	2	8	11	12	nw.	Ed. S. Gray.								
Plover.	Pocahontas.	1,426	14	14.7	- 3.3	52	31	-30	3	42	0.54	- 0.04	0.30	5.0	3	21	5	5	nw.	J. S. Smith.								
Ridgeway \$.	Pocahontas.	1,248	6	16.0	-	56	31	-27	3	39	0.80	-	0.45	7.7	7	12	12	7	s.	F. E. Hronek.								
Rockwell City \$.	Winneshiek.	1,215	12	16.4	- 2.8	45	29†	-25	3	39	2.43	+ 0.45	0.98	12.6	12	8	11	12	s.	Arthur Betts.								
Sac City.	Calhoun.	14	19.2	- 0.6	50	10†	-23	3	39	2.20	+ 1.50	0.80	22.0	4	21	0	10	nw.	C. M. Randall.									
St. Charles \$.	Sac.	1,278	34	20.0	+ 2.6	53	31	-15	3	46	0.60	- 0.35	0.40	6.0	2	11	7	13	nw.	E. N. Baily.								
Sigourney \$.	Keokuk.	877	14	23.9	+ 1.1	54	10†	-15	3	46	0.94	- 0.65	0.45	8.5	5	0	18	13	nw.	R. D. Minard.								
Stockport \$.	Van Buren.	8	25.5	-	60	10	-12	3	44	2.17	-	1.44	11.0	7	8	6	17	s.	J. T. Parker.									
Storm Lake.	Buena Vista.	1,440	21	19.0	+ 1.6	58	31	-26	3	56	0.62	- 0.09	0.30	7.7	4	-	-	-	-	-	-	J. P. Fox.						
Stuart.	Guthrie.	1,216	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	F. K. Gregg.					
Tipton \$.	Cedar.	807	11	23.8	+ 3.2	52	10	-11	3	41	1.13	- 0.36	0.50	5.1	7	10	6	15	nw.	I. F. Giger.								
Toledo.	Tama.	856	16	20.8	+ 1.7	50	10	-21	3	45	1.53	+ 0.55	0.50	6.8	5	11	7	13	nw.	G. W. Schofield.								
Wapello \$.	Louisa.	558	12	27.6	+ 2.5	53	10	-8	3	36	1.54	+ 0.21	1.01	-	5	6	13	12	se.	F. Sherman.								
Washington.	Washington.	769	28	24.4	+ 5.3	53	10	-16	3	36	-	-	-	-	-	-	-	-	-	-	-	-	Ralph S. Slippy.					
Waterloo.	Black Hawk.	862	27	18.1 ^d	+ 0.6	48 ^d	28	-18	3	47	0.60	- 1.08	0.41	6.6	5	12	8	11	se.	Samuel F. Folt.								
Waukeech.	Dallas.	1,039	21	21.8	-	56	10†	-18	3	45	0.60	- 1.08	0.37	4.5	2	16	10	10	s.	Earl C. Moore.								
Waverly \$.	Bremner.	948	14	15.6	- 2.3	47	31	-18	6	43	0.59	- 0.40	0.30	7.0	3	10	8	13	nw.	C. D. Carpenter.								
Webster City \$.	Hamilton.	519	19	24.4	-	53	29	-26	3	52	0.70	-	0.30	8.0	5	11	12	8	nw.	Phil. Dorweiler.								
West Bend \$.	Palo Alto.	1,197	17	15.4	- 1.4	49	10†	-29	3	47	1.11	+ 0.41	0.40	11.0	5	11	12	8	nw.	F. P. Butler.								
Whitten \$.	Hardin.	1,036	13	17.9	- 0.5	49	29	-27	3	49	0.53	- 0.33	0.30	5.3	3	2	17	12	nw.	Robert S. Cooper.								
Winterset.	Madison.	1,129	19	24.0	+ 2.6	57	10†	-17	3	51	0.73	- 0.18	0.30															

TABLE 1.—*Climatological data for January, 1911. District No. 5—Continued.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Observers.			
				Mean.			Departure from the normal.			Highest.			Departure from the normal.							
				Date.	Highest.	Lowest.	Date.	Greatest daily range.	Total.	Date.	Greatest in 24 hours.	Total snowfall, unmeasured.	Total.	Number of partly cloudy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.				
<i>Illinois—Continued.</i>																				
Greenville.....	Bond.....	635	33	33.8	+ 4.5	67	11	— 1	2	3†	40	2.55	— 0.28	0.70	0.5	8	10	5	16 sw.	
Griggsville.....	Pike.....	650	26	31.8	+ 4.6	68	26	— 6	3	41	41	1.47	— 0.65	0.94	1.0	5	8	4	19 sw.	
Havana.....	Mason.....	475	19	29.3	+ 2.2	57	26	— 4	3	36	36	2.06	— 0.14	0.84	6.0	5	6	11	14 s.	
Henry.....	Marshall.....	500	23	27.4	+ 3.9	52	10	— 2	3	38	38	2.10	+ 0.16	1.48	5.5	9	9	5	17 sw.	
Hillsboro.....	Montgomery.....	675	17	34.0	+ 3.2	66	11	— 0	3	42	42	1.93	— 0.55	0.75	T.	9	7	0	24 s.	
Joliet.....	Will.....	541	20	25.7	+ 1.1	50	26	— 5	18	41	41	1.58	— 0.48	0.81	3.7	11	4	4	23 sw.	
Kishwaukee.....	Winnebago.....	730	23	22.6	+ 2.1	49	31	— 7	4†	32	32	0.80	— 1.42	0.16	6.2	15	5	8	18 s.	
La Grange.....	Cook.....	657	19	26.6	+ 3.2	57	11	— 3	5	36	36	1.23	— 0.72	0.33	6.4	10	9	7	15 sw.	
La Harpe.....	Hancock.....	698	32	28.2	+ 4.1	60	10	— 10	3	41	41	4.17	+ 1.77	1.24	11.8	7	12	0	19 nw.	
Lanark.....	Carroll.....	883	22	20.7	0.0	48	31	— 11	3†	48	48	0.46	— 1.06	0.15	2.5	10	6	6	15 nw.	
La Salle.....	La Salle.....	536	33	26.6	+ 4.3	53	26	— 1	3	40	40	1.78	— 0.38	0.92	5.2	15	2	12	17 sw.	
Lincoln.....	Logan.....	482	33	30.2	+ 2.8	59	11†	— 3	18	35	35	2.45	+ 0.14	0.82	5.9	8	5	12	14 s.	
Martinton.....	Iroquois.....	633	24	28.2	+ 4.0	55	11	— 10	18	40	40	1.43	— 0.65	1.02	4.0	7	6	2	23 sw.	
Mascoutah.....	St. Clair.....	425	21	37.6	+ 6.3	73	11	— 3	3†	40	40	0.76	— 1.81	0.21	1.0	4	5	14	12 se.	
Minonk.....	Woodford.....	745	18	27.6	+ 3.3	54	26	— 4	18	35	35	2.08	+ 0.22	0.76	6.0	8	7	9	15 sw.	
Monmouth.....	Warren.....	784	19	26.6	+ 3.4	57	10	— 11	3	40	40	2.53	+ 0.49	1.50	9.7	11	6	11	14 s.	
Morrisonville.....	Whiteside.....	685	17																	
Mount Vernon.....	Christian.....	638	12	32.4	+ 3.3	64	11	— 1	3	41	41	2.49	+ 0.22	1.65	0.1	6	9	10	12 s.	
Oregon.....	Jefferson.....	511	17	34.2	+ 1.4	70	11	— 2	4	36	36	1.23	— 1.72	0.40	0.5	7	8	6	17 n.	
Ogle.....	Ogle.....	702	2	23.0	+ 2.1	48	31	— 7	3†	38	38	1.39	— 0.36	0.40	10.1	10	3	4	24 sw.	
Ottawa.....	La Salle.....	500	25	26.4	+ 2.1	51	26†	— 5	18	36	36	1.80	— 0.36	0.72	4.0	9	0	1	30 sw.	
Pana.....	Christian.....	692	25	32.2	+ 3.7	62	11	— 1	3†	37	37	2.93	+ 0.34	1.68	1.0	6	16	2	13 s.	
Peoria.....	Peoria.....	609	33	27.3	+ 4.2	56	26	— 5	3	32	32	2.37	+ 0.17	1.23	11.3	9	2	12	17 s.	
Pontiac.....	Livingston.....	546	9	28.2	—	50	11	— 5	18	31	31	2.06	—	0.80	6.0	7	5	4	22 sw.	
Riley.....	McHenry.....	956	52	22.6	+ 3.9	44	31	— 6	3	34	34	0.96	— 0.94	0.22	4.1	15	3	9	19 sw.	
Rockford.....	Winnebago.....	783	19	21.2	+ 0.1	47	26	— 6	3	43	43	0.74	— 1.77	0.15	—	15	9	1	21	—
Rushville.....	Schuyler.....	670	20	30.0	+ 3.6	62	26	— 7	3	40	40	2.45	+ 0.32	1.26	4.0	6	5	5	21 sw.	
St. Charles.....	Kane.....	700	16	23.8	+ 1.0	46	26†	— 6	5	41	41	1.28	— 0.72	0.30	6.0	11	6	11	14 s.	
St. Peter.....	Fayette.....	10	35.0	+ 3.2	63	11	— 2	4	40	40	1.57	— 0.76	0.65	1.0	5	10	10	11 sw.		
Sparta.....	Randolph.....	538	25	37.2	+ 4.6	70	11	— 1	4	40	40	1.17	— 1.28	0.53	0.5	9	10	6	15 se.	
Springfield.....	Sangamon.....	644	33	30.9	+ 4.6	60	26	— 2	3	36	36	2.34	+ 0.09	1.30	1.9	10	3	7	21 sw.	
Streator.....	La Salle.....	626	18	25.8	+ 0.8	55	25	— 2	4†	47	47	2.22	+ 0.13	1.61	5.2	7	9	4	18 sw.	
Sullivan.....	Moultrie.....	530	11	32.2	+ 3.4	62	11	— 0	4	39	39	3.32	+ 0.87	1.36	3.0	7	5	13	13 sw.	
Sycamore.....	De Kalb.....	855	31	22.8	+ 2.9	49	26	— 6	5	46	46	1.47	— 0.40	0.40	10.0	6	9	2	20 sw.	
Walnut.....	Bureau.....	717	20	25.8	+ 2.5	51	27	— 6	18	35	35	1.25	— 0.65	0.42	3.8	12	6	7	18 s.	
White Hall.....	Greene.....	573	3	32.2	—	69	11	— 2	3	44	44	3.63	—	2.32	0.9	8	10	6	15 w.	
Windsor.....	Shelby.....	681	12	32.5	+ 5.1	68	11	— 0	4	40	40	2.22	— 0.39	0.68	2.1	9	9	5	17 s.	
Zion.....	Winnebago.....	900	24	22.3	+ 1.5	47	31	— 8	4	40	40	0.91	— 1.06	0.34	7.0	6	10	6	15 sw.	
Yorkville.....	Kendall.....	584	24	24.8	+ 3.0	49	26†	— 7	18	40	40	1.16	— 0.76	0.75	3.2	7	5	9	17 s.	
	Carroll.....	938	17	21.0	+ 0.2	48	31	— 10	3	53	53	0.20	— 1.39	0.20	3.0	1	13	3	15 w.	

^{a, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.}^{*} Precipitation included in that of the next measurement.^{**} Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.[†] Also on other dates.[‡] Separate dates of falls not recorded.^{\$} Data are from standard instruments not supplied by the U. S. Weather Bureau.[§] Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.^{||} Estimated by observer.[¶] Precipitation for the 24 hours ending on the morning when it is measured.^{||} Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for January, 1911. District No. 5, upper Mississippi Valley.*

TABLE 2.—*Daily precipitation for January, 1911. District No. 5—Continued.*

TABLE 2.—*Daily precipitation for January, 1911. District No. 5—Continued.*

TABLE 2.—*Daily precipitation for January, 1911. District No. 5—Continued.*

TABLE 3.—Maximum and minimum temperatures for January, 1911. District No. 5, upper Mississippi Valley.

Date.	North Dakota.										Minnesota.																		
	Bottineau.		Devils Lake.		Lisbon.		Minot.		Pembina.		Collegeville.		Crookston.		Grand Meadow.		Montevideo.		Moorhead.		New Ulm.		Pine River Dam.		St. Paul.		Winnibigoshish.		
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.			
1....	-11	-21	-12	-21	-4	-17	-17	-17	-18	-35	18	-7	-15	-21	23	12	5	-11	-12	-18	30	0	6	-11	16	-1	6	-15	
2....	-21	-36	-17	-30	-4	-19	-8	-31	-12	-27	-2	-13	-17	-26	21	-10	-12	-16	-13	-22	21	-10	8	-18	1	-18	-9	-18	
3....	24	-36	25	-26	34	-28	35	-28	-12	-30	-3	-31	13	-29	-6	-30	19	-26	14	-27	16	-31	-8	-48	-6	-24	-4	-37	
4....	0	-21	1	-11	14	-6	5	-8	-8	-18	10	-13	-4	-27	10	-18	5	-12	10	-12	7	-31	-6	-12	11	-8	7	-12	
5....	6	-15	-1	-8	6	-10	20	-4	-10	-20	1	-12	4	-14	3	-10	8	-10	3	-10	4	-9	-4	-22	-1	-12	1	-25	
6....	19	-12	23	-10	26	-12	31	-5	2	-10	13	-7	14	-10	8	-15	20	-5	14	-8	9	-14	14	-5	11	-8			
7....	5	-10	-3	-16	27	-10	7	-6	-18	-30	19	3	6	-18	28	-6	32	-3	16	-14	31	1	8	-9	20	5	13	-20	
8....	4	-9	1	-15	3	-10	5	-7	-12	-26	22	2	3	-15	32	-2	10	0	11	-10	11	1	11	0	28	2	11	-5	
9....	1	-10	12	-21	40	-14	5	-5	-8	-22	29	-2	29	-10	24	-11	40	-5	30	-11	35	8	25	-14	33	-6	26	-10	
10....	-18	-28	-21	-29	38	-18	-18	-25	-13	-20	33	-2	-13	-17	36	16	0	-4	-11	-22	37	2	32	0	40	-4	27	-9	
11....	-16	-35	-20	-31	20	-23	-33	-18	-28	3	-17	-5	-27	19	-6	-3	-16	-12	-23	13	-13	3	-22	1	-8	-6	-23		
12....	-20	-35	-18	-27	6	-8	-13	-24	-22	-35	18	-7	-5	-20	23	4	14	-7	2	-22	18	-11	11	-10	20	1	8	-12	
13....	-15	-30	-17	-27	6	-22	-10	-26	-18	-28	17	-12	-15	-25	20	-2	-3	-18	-12	-23	10	-14	-2	-17	4	-4	-4	-21	
14....	-16	-34	-6	-28	0	-22	2	-24	-12	-38	11	-11	-13	-22	6	-12	5	-16	-2	-18	2	-16	-3	-18	1	-8	-5	-21	
15....	-20	-36	-10	-28	0	1	9	-1	-8	-24	15	-2	-12	-21	8	-12	11	-8	-2	-18	14	-6	2	-22	14	-1	1	-25	
16....	5	-38	2	-21	5	-18	5	-23	-16	-20	18	-8	4	-24	10	-6	10	-3	8	-19	13	-2	3	-30	10	-4	1	-28	
17....	14	-1	13	8	10	-15	24	-17	2	-18	22	3	5	-12	21	-2	18	-5	8	-10	18	2	13	-11	23	5	18	-15	
18....	10	-5	15	-2	27	-17	12	-7	-5	-16	29	5	18	-4	22	-6	32	10	22	-3	30	2	25	1	26	3	27	5	
19....	9	-6	4	-4	20	-2	21	-4	-10	-22	28	5	15	-3	24	-8	15	3	14	0	31	5	21	-1	19	13	-6		
20....	-6	-6	17	-10	15	10	-5	-12	-28	23	2	13	-4	34	10	21	10	18	-8	17	5	18	-3	35	-2	18	-9		
21....	-10	-24	-2	-17	10	-12	4	-16	-5	-24	9	-10	0	-18	13	-6	9	-14	2	-10	13	-8	5	-20	8	-8	8	-20	
22....	5	-30	6	19	9	15	17	-22	6	-16	19	-1	-2	-15	20	-14	15	4	1	-12	23	-10	30	2	21	9	15	-15	
23....	22	-28	5	-3	25	-9	31	-15	24	-12	33	6	20	-10	32	6	38	7	24	-12	31	-1	29	-25	38	6	32	-18	
24....	15	0	15	0	25	0	16	2	2	-4	35	18	24	-3	36	19	33	5	24	-3	38	7	34	9	38	22	30	0	
25....	22	4	15	-3	27	-4	10	-4	8	-8	37	23	20	-2	35	32	37	14	31	16	38	14	36	23	37	32	34	20	
26....	9	2	11	-1	30	14	4	0	12	-5	38	33	12	11	37	32	37	34	22	4	37	34	36	22	38	34	40	31	
27....	6	-19	1	-17	19	5	18	-15	-5	-18	37	12	3	-1	35	18	15	8	-13	20	14	32	6	35	8	34	1		
28....	24	-21	28	-14	32	-12	27	-13	24	-16	29	-1	23	-15	31	4	36	-5	32	-13	26	0	28	-19	31	2	29	-15	
29....	-6	-6	21	-12	20	2	11	-8	8	0	34	4	3	-3	36	22	28	15	25	8	30	14	24	-2	36	2	27	-7	
30....	15	-20	15	-13	30	-15	28	-6	0	-18	17	-4	18	-15	22	-4	31	5	22	-14	28	-3	3	9	-17	21	-3	9	-19
31....	13	-7	11	-2	.....	-9	11	2	12	-12	39	15	20	-10	43	16	42	15	22	8	42	-3	31	5	40	21	27	2
Mns..	2.2	-18.5	4.3	-15.3	17.3	-10.6	8.8	-13.6	-4.3	-20.3	21.0	-0.9	5.4	-13.7	22.8	0.9	18.3	-1.7	10.2	-11.5	22.4	-3.0	15.0	-10.2	21.0	1.0	14.5	-11.4	

Date.	Wisconsin.										Iowa.																	
	Delavan.		Eau Claire.		La Crosse.		Madison.		Mauston.		Spooner.		Wausau.		Algona.		Cedar Rapids.		Charles City.		Davenport.		Des Moines.		Dubuque.		Keokuk.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1....	35	27	29	15	31	17	35	25	32	16	24	9	34	22	27	-1	39	29	28	17	42	19	33	-3	38	31	46	26
2....	37	5	20	-2	23	-4	35	-2	30	2	11	-7	25	8	0	-13	8	5	20	-16	19	-3	38	-3	26	1		
3....	8	-8	-2	-28	-4	-30	0	-11	2	-18	-2	-32	19	-15	-4	-28	10	-14	-4	-26	1	-11	5	-17	1	-11	-10	
4....	14	-8	10	-21	12	-15	12	-11	12	-29	4	-9	14	-19	15	-7	17	-16	14	-8	20	5	16	-7	26	1		
5....	13	-8	1	-16	3	-6	4	-7	2	-19	-1	-21	10	-19	9	-5	15	1	5	-13	21	1	30	5	9	-2	45	11
6....	17	-4	7	-17	7	-12	10	-3	7	-18	11	-20	11	-9	33	-4	11	-10	-20	23	-1	33	2	15	-2	39	7	
7....	37	-20	4	24	1	27	1	2	4	-14	12	-2	18	-2	28	11	43	-4	31	5	42	27	1	51	33			
8....	36	11	24	9	35	5	35	10	9	4	19	4	25	7	39	5	33	31	36	0	40	15	43	17	40	8	45	26
9....	20	-2	31	-11	30	-9	27	-1	18	-9	25	-14	25	-4	35	6	26	-8	32	9	41	12	30	1	41	14		
10....	42	19	41	10	42	11	40	27	31	18	31	7	37	12	44	-2	53	6	39	-2	56	14	48	30	63	33		
11....	42	24	36	2	16	6	39	14	38	10	8	-9	37	13	4	-11	24	10	9	-3	47	24	14	1	43	16	56	15
12....	32	19	23	12	26	1																						

MONTHLY WEATHER REVIEW.

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TABLE 3.—*Maximum and minimum temperatures for January, 1911. District No. 5—Continued.*

Date.	Hannibal, Mo.		Laporte, Ind.		Illinois.															
	Max.	Min.	Max.	Min.	Cairo.		Greenville.		La Salle.		Monmouth.		Mount Vernon §§		Peoria.		Spring- field.		Winne- bago.	
					Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1.....	47	9	40	32	50	41	46	34	42	34	40	32	49	27	42	31	45	28	36	28
2.....	9	0	40	10	50	11	46	6	42	2	41	1	20	12	31	—1	28	8	38	3
3.....	—8	32	6	11	6	8	2	8	—1	4	—11	15	4	8	—5	7	—2	8	—7	
4.....	6	—	32	—3	25	5	28	2	18	—1	23	—4	27	2	22	—1	28	1	15	—8
5.....	31	2	18	—3	40	20	39	13	22	2	40	4	30	4	37	5	41	11	10	—5
6.....	49	13	16	—1	40	20	39	13	22	2	40	4	30	4	37	5	41	11	10	—5
7.....	47	10	32	9	46	33	39	20	22	6	39	2	35	10	28	4	37	12	15	4
8.....	52	32	39	7	51	34	48	30	46	11	47	10	43	15	47	24	48	31	40	0
9.....	45	24	36	11	56	38	47	29	40	15	43	22	50	18	41	18	43	25	37	12
10.....	41	16	33	9	45	30	39	18	29	9	33	8	43	22	32	9	37	16	22	—1
11.....	64	36	38	15	58	34	54	27	51	26	57	27	57	21	52	27	55	28	43	21
12.....	60	17	50	15	69	53	67	33	49	32	49	23	70	34	50	30	62	26	43	23
13.....	31	19	38	32	62	40	33	27	37	30	32	23	52	30	35	30	34	25	32	19
14.....	33	28	38	33	70	44	38	31	35	32	32	28	51	32	34	31	35	29	32	27
15.....	31	15	35	30	64	46	38	29	33	15	32	13	49	35	33	17	35	22	32	11
16.....	16	9	30	25	46	24	29	19	18	8	16	5	30	25	20	10	22	14	15	3
17.....	25	14	25	23	38	23	29	19	19	10	15	9	31	20	21	12	24	17	12	4
18.....	25	22	24	19	34	30	26	24	24	7	24	15	31	21	24	4	24	16	20	10
19.....	28	20	31	11	30	26	31	15	26	1	25	3	28	23	27	1	28	8	20	—3
20.....	37	27	38	21	41	26	42	21	33	26	31	25	37	23	34	27	39	28	31	20
21.....	47	37	40	29	56	32	45	23	40	33	38	31	49	26	39	34	44	37	33	
22.....	37	14	32	11	58	30	45	25	34	17	38	16	36	31	35	16	41	20	35	12
23.....	28	12	34	13	33	28	30	22	24	11	24	8	39	23	26	12	26	17	22	3
24.....	42	14	33	11	42	24	41	19	39	18	40	14	41	15	38	16	40	21	38	12
25.....	44	34	43	19	51	33	46	27	39	27	37	24	45	21	42	26	43	28	38	25
26.....	49	41	45	36	52	42	46	37	41	35	39	35	54	26	41	36	44	40	37	33
27.....	71	47	46	36	58	51	63	46	53	39	48	37	60	37	56	40	66	44	46	35
28.....	60	34	51	35	67	42	59	40	50	33	47	33	63	52	50	32	57	46	40	33
29.....	45	29	40	28	55	40	47	35	37	27	33	25	54	35	40	28	45	32	36	22
30.....	54	32	47	31	67	48	62	46	47	28	49	31	65	54	49	29	56	36	42	30
31.....	33	21	46	18	56	36	54	24	28	17	42	15	39	34	29	17	36	22	36	11
Means.....	40.2	21.1	36.6	19.0	49.6	32.5	42.6	24.9	34.6	18.6	35.7	17.4	43.6	24.7	35.7	19.0	39.3	22.5	31.0	13.6